CLAIMS:

Claim 1. A method for controlling reformate delivered to an electrochemical cell in an electric power system, comprising:

receiving a reformate pressure signal from a reformate pressure sensor;

receiving a controllable valve position signal from a controllable valve;

actuating a controllable valve in response to said reformate pressure signal, a desired reformate pressure, and said controllable valve position signal.

Claim 2. The method of Claim 1 wherein said actuating is responsive to a reformate pressure error signal responsive to the difference between said reformate pressure signal and said desired reformate pressure signal.

Claim 3. The method of Claim 2 wherein said actuating is in response to a desired controllable valve position value.

Claim 4. The method of Claim 3 wherein said desired controllable valve position value is responsive to said reformate pressure error signal.

Claim 5. The method of Claim 4 wherein said desired controllable valve position value is reduced if said reformate pressure error signal is greater than a first pressure error threshold and increased if said reformate pressure error signal is less than a second pressure error threshold

Claim 6. The method of Claim 1 wherein:

said actuating is responsive to a controllable valve position error; and

said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value.

Claim 7. The method of Claim 3 wherein said actuating is responsive to a controllable valve command.

Claim 8. The method of Claim 7 wherein said controllable valve command is responsive to a controllable valve position error.

Claim 9. The method of Claim 8 wherein said controllable valve command is reduced if said controllable valve position error signal is greater than a first position error threshold and increased if said controllable valve position error signal is less than a second position error threshold.

Claim 10. The method of Claim 1 wherein said actuating is responsive to a controllable valve command.

Claim 11. The method of Claim 10 wherein said controllable valve command is responsive to a controllable valve position error.

Claim 12. The method of Claim 11 wherein said controllable valve command is reduced if said controllable valve position error signal is greater than a first position error threshold and increased if said controllable valve position error signal is less than a second position error threshold.

Claim 13. The method of Claim 11 wherein said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value.

Claim 14. The method of Claim 13 wherein said desired controllable valve position value is responsive to a reformate pressure error signal.

Claim 15. The method of Claim 14 wherein said reformate pressure error signal is responsive to a difference between said reformate pressure signal and said desired reformate pressure signal.

Claim 16. The method of Claim 14 wherein said desired controllable valve position value is reduced if said reformate pressure error signal is greater than a first pressure error threshold and increased if said reformate pressure error signal is less than a second pressure error threshold.

Claim 17. The method of Claim 1 further including:

receiving a metered reformate pressure signal representative of the metered reformate pressure;

actuating said controllable valve in response to said reformate pressure signal, said metered reformate pressure signal, said desired reformate pressure signal, and said controllable valve position signal.

Claim 18. The method of Claim 17 wherein said actuating is responsive to an actual mass flow of said reformate, wherein an actual mass flow signal is computed from a pressure differential signal.

Claim 19. The method of Claim 18 wherein said pressure differential signal is responsive to a difference between said reformate pressure signal and said metered reformate pressure signal.

Claim 20. The method of Claim 18 wherein said pressure differential signal is utilized to index a look up table to yield said actual mass flow signal.

Claim 21. The method of Claim 20 wherein said actuating is responsive to a mass flow error signal responsive to the difference between a theoretical mass flow signal and said actual mass flow signal.

Claim 22. The method of Claim 21 wherein said actuating is responsive to a desired controllable valve position value which is reduced if said mass flow error signal is greater than a first mass flow error threshold and increased if said reformate pressure error signal is less than a second mass flow error threshold.

Claim 23. A system for controlling reformate delivered to an electrochemical cell in an electric power system comprising:

a reformate pressure sensor disposed in said reformate and configured to measure reformate pressure at a reformer;

a controllable valve configured to control the flow of reformate to said electrochemical cell responsive to a controllable valve command; and

a controller coupled to said reformate pressure sensor and said controllable valve, and

wherein said controller receives a reformate pressure signal from said reformate pressure sensor, a controllable valve position signal from said controllable valve, and transmits said controllable valve command responsive to at least one of said reformate pressure signal, a desired reformate pressure signal, and said controllable valve position signal.

Claim 24 The system of Claim 23 wherein said controllable valve command is responsive to a reformate pressure error signal responsive to the difference between said reformate pressure signal and a desired reformate pressure signal representative of a desired reformate pressure.

Claim 25. The system of Claim 23 herein said controllable valve command is responsive to a desired controllable valve position value.

Claim 26. The system of Claim 25 wherein said desired controllable valve position value is responsive to a reformate pressure error signal.

Claim 27. The system of Claim 26 wherein said desired controllable valve position value is reduced if said reformate pressure error signal is greater than a first pressure error threshold and increased if said reformate pressure error signal is less than a second pressure error threshold.

Claim 28. The system of Claim 23 wherein

said controllable valve command is responsive to a controllable valve position error; and

said controllable valve position error is responsive to a difference between a measured controllable valve position signal and a desired controllable valve position value.

Claim 29. The system of Claim 23 wherein said controllable valve command is responsive to a controllable valve position error.

Claim 30. The system of Claim 29 wherein said controllable valve command is reduced if said controllable valve position error signal is greater than a first position error threshold and increased if said controllable valve position error signal is less than a second position threshold.

Claim 31. The system of Claim 23 wherein said controllable valve command is responsive to a controllable valve position error.

Claim 32. The system of Claim 31 wherein said controllable valve command is reduced if said controllable valve position error signal is greater than a first position error threshold and increased if said controllable valve position error signal is less than a second position error threshold.

Claim 33. The system of Claim 31 wherein said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value.

Claim 34. The system of Claim 33 wherein said desired controllable valve position value is responsive to a reformate pressure error signal.

Claim 35. The system of Claim 34 wherein said reformate pressure error signal is responsive to a difference between said reformate pressure signal and said desired reformate pressure signal.

Claim 36. The system of Claim 35 wherein said desired controllable valve position value is reduced if said reformate pressure error signal is greater than a first pressure error threshold and increased if said reformate pressure error signal is less than a second pressure error threshold.

Claim 37. The system of Claim 23 further including:

a metered reformate pressure sensor coupled to said controller and configured to measure reformate pressure at said electrochemical cell;

wherein said controller further receives a metered reformate pressure signal generated by said metered reformate pressure sensor and said controllable valve command is also responsive to said metered reformate pressure signal.

Claim 38. The system of Claim 37 wherein said controllable valve command is responsive to an actual mass flow of said reformate, wherein an actual mass flow signal is computed from a pressure differential signal.

Claim 39. The system of Claim 38 wherein said pressure differential signal is responsive to a difference between said reformate pressure signal and said metered reformate pressure signal.

Claim 40. The system of Claim 38 wherein said pressure differential signal is utilized to index a look up table to yield said actual mass flow signal.

Claim 41. The system of Claim 37 wherein said actuating is responsive to a mass flow error signal responsive to the difference between a theoretical mass flow signal and said actual mass flow signal.

Claim 42. The system of Claim 41 wherein said actuating is responsive to a desired controllable valve position value which is reduced if said mass flow error signal is greater than a first mass flow error threshold and increased if said reformate pressure error signal is less than a second mass flow error threshold.

Claim 43. A storage medium encoded with a machine-readable computer program code for controlling reformate delivered to an electrochemical cell in an electric power system, said storage medium including instructions for causing a computer to implement a method comprising:

receiving a reformate pressure signal from a reformate pressure sensor;

receiving a controllable valve position signal from a controllable valve;

actuating a controllable valve in response to said reformate pressure signal, a desired reformate pressure, and said controllable valve position sign.

Claim 44. The storage medium of Claim 43 wherein said actuating is responsive to a reformate pressure error signal responsive to the difference between said reformate pressure signal and said desired reformate pressure signal.

Claim 45. The storage medium of Claim 43 wherein said actuating is responsive to a controllable valve position error; and

said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value.

Claim 46. The storage medium of Claim 43 wherein said actuating is responsive to a controllable valve command.

Claim 47. The storage medium of Claim 43 further including instructions for causing a computer to implement a method comprising:

receiving a metered reformate pressure signal representative of the metered reformate pressure;

actuating said controllable valve in response to said reformate pressure signal, said metered reformate pressure signal, said desired reformate pressure, and said controllable valve position signal.

Claim 48. The storage medium of Claim 47 wherein said actuating is responsive to an actual mass flow of said reformate, wherein an actual mass flow signal is computed from a pressure differential signal.

Claim 49. The storage medium of Claim 48 wherein said pressure differential signal is responsive to a difference between said reformate pressure signal and said metered reformate pressure signal.

Claim 50. A computer data signal for controlling reformate delivered to an electrochemical cell in an electric power system, said computer data signal comprising code configured to cause a computer to implement a method comprising:

receiving a reformate pressure signal from a reformate pressure sensor;

receiving a controllable valve position signal from a controllable valve;

actuating a controllable valve in response to said reformate pressure signal, a desired reformate pressure, and said controllable valve position signal.

Claim 51. The computer data signal of Claim 50 wherein said actuating is responsive to a reformate pressure error signal responsive to the difference between said reformate pressure signal and said desired reformate pressure signal.

Claim 52. The computer data signal of Claim 50 wherein said actuating is responsive to a controllable valve position error; and

said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value.

Claim 53. The computer data signal of Claim 50 wherein said actuating is responsive to a controllable valve command

Claim 54. The computer data signal of Claim 50 further including code configured to cause a computer to implement a method comprising:

receiving a metered reformate pressure signal representative of the metered reformate pressure;

actuating said controllable valve in response to said reformate pressure signal, said metered reformate pressure signal, said desired reformate pressure, and said controllable valve position signal.

Claim 55. The computer data signal of Claim 54 wherein said actuating is responsive to an actual mass flow of said reformate, wherein an actual mass flow signal is computed from a pressure differential signal.

Claim 56. The computer data signal of Claim 55 wherein said pressure differential signal is responsive to a difference between said reformate pressure signal and said metered reformate pressure signal.